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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/564,527	06/28/2006	Hideki Toya	284525US0PCT	3452

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EXAMINER	
JACOBSON, MICHELE LYNN	

ART UNIT	PAPER NUMBER
1794	

NOTIFICATION DATE	DELIVERY MODE
09/09/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/564,527	TOYA ET AL.	
	Examiner	Art Unit	
	MICHELE JACOBSON	1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4* is/are rejected.

7)☒ Claim(s) *5-12* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *1/4/08, 4/7/06, 1/13/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claims 5-12 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend from any other multiple dependent claim. See MPEP § 608.01(n). Accordingly, the claims have not been further treated on the merits.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Toya et al. U.S. Patent No. 6,107,411 (hereafter referred to as Toya) and Karabedian et al. U.S. Patent No. 4,626,455 (hereafter referred to as Karabedian).

4. Toya teaches a block copolymer (hereinafter referred to as the block copolymer (I)) consisting essentially of a vinyl aromatic hydrocarbon and a conjugated diene and satisfying the following conditions (1) to (5) or such a block copolymer satisfying the following condition (6) in addition to the conditions (1) to (5), and a heat shrinkable film made of such a block copolymer.

a. (1) The weight ratio of vinyl aromatic hydrocarbon units to conjugated diene units is from 60:40 to 90:10.

b. (2) The number average molecular weight of the block copolymer is from 40,000 to 500,000.

c. (3) The ratio of E30/E10, where E30 is the storage modulus at a temperature of 30° C. and E10 is the storage modulus at a temperature of 10° C., is from 0.75 to 1.

d. (4) The block proportion of a vinyl aromatic hydrocarbon polymer contained in the block copolymer is from 70 to 100%, provided the block proportion=W1/W0×100, where W1 is the weight of block polymer chains of the vinyl aromatic hydrocarbon in the block copolymer, and W0 is the total weight of the vinyl aromatic hydrocarbon units in the block copolymer.

e. (5) Chains consisting of from 1 to 3 repeating units of the vinyl aromatic hydrocarbon contained in the block copolymer, are not more than 25%, based on the above W0.

5. Further, the present invention provides a block copolymer composition comprising the block copolymer (I) and the following polymer (II), and a heat shrinkable film made thereof:

f. (II) at least one polymer selected from the group consisting of

i. a block copolymer consisting essentially of a vinyl aromatic hydrocarbon and a conjugated diene, which is different from the block copolymer (I)

ii. a vinyl aromatic hydrocarbon polymer

iii. a copolymer consisting essentially of a vinyl aromatic hydrocarbon and a (meth)acrylate and

iv. a rubber-modified styrene type polymer.

6. The block copolymer composition preferably comprises from 50 to 99.8 parts by weight of the block copolymer (I) and from 0.2 to 50 parts by weight of the polymer (II), provided that the total amount of the polymers (I) and (II) is 100 parts by weight.

7. The vinyl aromatic hydrocarbon to be used for the production of the block copolymer (I) of the present invention may, for example, be styrene, o-methylstyrene, p-methylstyrene, p-tert-butylstyrene, 2,4-dimethylstyrene, 2,5-dimethylstyrene, α-methylstyrene, vinyl naphthalene or vinyl anthracene. Particularly, styrene is commonly used.

8. The conjugated diene to be used for the production of the block copolymer (I) of the present invention may, for example, be 1,3-butadiene, 2-methyl-1,3-butadiene (isoprene), 2,3-dimethyl-1,3-butadiene, 1,3-pentadiene or 1,3-hexadiene. Particularly, 1,3-butadiene or isoprene is commonly used. The weight ratio of the vinyl aromatic hydrocarbon to the conjugated diene is from 60:40 to 90:10. (Col 1, line 66-Col 3, line4)

9. The proportion of chains consisting of from 1 to 3 repeating units (hereinafter referred to as s1 to s3) of the vinyl aromatic hydrocarbon in the block copolymer (I), is desired to be not more than 25%, based on the total weight of the vinyl aromatic hydrocarbon units in the block copolymer. If the proportion of s1 to s3 chains exceeds 25%, spontaneous shrinkage tends to be substantial, such being undesirable. The

proportion of s1 to s3 chains is obtained by the following formula.(Col. 3, lines 59-67) The block proportion and the s1 to s3 chain proportion in the block copolymer (I) can be controlled by adjusting the amount of a randomization agent used at the time of copolymerizing the vinyl aromatic hydrocarbon with the conjugated diene. (Col. 5, lines 26-30)

10. The copolymer (iii) consisting essentially of a vinyl aromatic hydrocarbon and a (meth)acrylate is one which maintains transparency even when mixed with the block copolymer (I). It may be obtained by polymerizing the vinyl aromatic hydrocarbon as described for the production of the block copolymer (I), with a (meth)acrylate. The (meth)acrylate may, for example, be methyl acrylate, ethyl acrylate, butyl acrylate, isobutyl acrylate, hexyl acrylate, (2-ethyl)hexyl acrylate, methyl methacrylate, ethyl methacrylate, butyl methacrylate or (2-hydroxy)ethyl methacrylate. (Col. 7, lines 5-15)

11. The rubber-modified styrene type polymer (iv) can be obtained by polymerizing a vinyl aromatic hydrocarbon or a monomer copolymerizable therewith, in the presence of various elastomers. As the vinyl aromatic hydrocarbon, those described above for the production of the block copolymer (I), may be employed. As the monomer copolymerizable therewith, (meth)acrylic acid or a (meth)acrylate may, for example, be employed. As the elastomer, butadiene rubber, styrene-butadiene rubber, styrene-butadiene block copolymer elastomer, chloroprene rubber or natural rubber may, for example, be employed. A particularly preferred rubber-modified styrene type polymer may be high impact polystyrene (HIPS). (Col. 7, lines 21-33)

12. Toya recites that a film made from such a composition is excellent in impact resistance and spontaneous shrinkage resistance and may be sued for heat shrinkable labels. (Col 15, lines 39-45)

13. Toya is silent regarding foaming the film.

14. Foaming of polystyrene films for use in label applications is well known in the label making art as evidenced by the disclosure in Karabedian of a label comprising a polystyrene foam layer. (Col. 1, lines 5-13) It would have been obvious to one having ordinary skill in the art at the time the invention was made to have tried using the composition for the film recited by Toya to produce a foamed film for use in label applications because of the recitation in Toya that the composition produces films with excellent impact resistance and spontaneous shrinkage resistance. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have optimized the thickness of the labels produced depending on structural integrity required for the label application. It would It would have been obvious to one having ordinary skill in the art at the time the invention was made to have optimized the polymer recited by Toya for use in a foaming application and since the composition of the film recited by Toya is the same as the composition of the film claimed by applicant the film would therefore be expected to inherently exhibit the same properties of specific gravity as claimed in claim 1 and uniaxial elongation as claimed in claim 2. The utilization of the composition of the film of Toya for a foamed label would have produced the invention as claimed in claims 1-4.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHELE JACOBSON whose telephone number is (571)272-8905. The examiner can normally be reached on Monday-Thursday 8:30 AM-7 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carol Chaney can be reached on (571) 272-1284. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Michele L. Jacobson
Examiner /M. J./
Art Unit 1794

/Carol Chaney/
Supervisory Patent Examiner, Art Unit 1794